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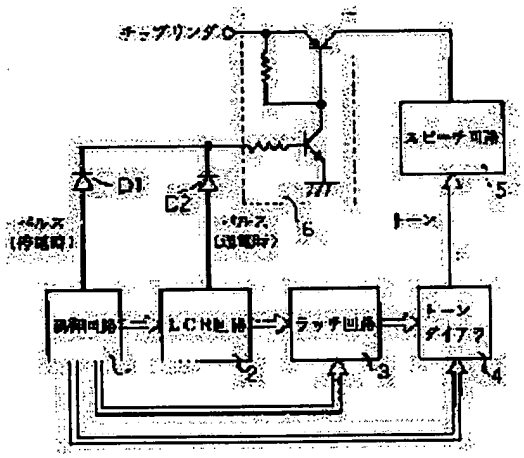
(54) TELEPHONE SET

(57)Abstract:

PURPOSE: To delete a tone/pulse switchable dialer by transmitting a tone signal from a tone dialer under the control of a control circuit, and transmitting a pulse signal from the control circuit at the time of power failure.

CONSTITUTION: A control circuit 1 detects power failure, and controls an LCR circuit 2, latch circuit 3, and tone dialer 4. Diodes D1 and D2 select two signals from the control circuit 1 and the LCR circuit 2 to a Tr circuit 6 for circuit closure by OR. Then, at the time of power supply, the tone signal is transmitted through the LCR circuit 2 and the latch circuit 3 from the tone dialer under the control of the control circuit 1, and the pulse signal is transmitted from the LCR circuit 2. At the time of power failure, the tone signal is also transmitted from the tone dialer 4 after the latch circuit 3 is made inoperative under the control of the control circuit 1, and the pulse signal is transmitted from the control circuit 1. Thus, a part of the LCR function is operated by the control circuit at the time of power failure, so that the tone/pulse switchable dialer can be deleted.



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* NOTICES *

CLAIMS

[Claim(s)]
[Claim 1] The ferrite ingredient characterized by ZnOmol%/Fe2 O3 mol% being 0.35 or less as a principal component, including Fe2 O3 43.0-49.5-mol%, 33.5-49.0 mol % of MnO(s), and 8.0-17.0 mol % of ZnO(s).
[Claim 2] The ferrite ingredient characterized by coming to add at least one or more of of CaO0.006 - 0.12wt%, SiO2 0.001 - 0.05wt%, and Bi2 O3 0.1 - 1.0wt% into the ferrite ingredient concerning claim 1 as an accessory constituent.
[Claim 3] Fe2 O3 43.0-49.5-mol%, 33.5-49.0 mol % of MnO(s), and 8.0-17.0 mol % of ZnO(s) are included as a principal component. And after mixing the ferrite ingredient which becomes considering ZnOmol%/Fe2 O3 mol% as 0.35 or less and carrying out temporary quenching, it pulverizes. The manufacture approach of the deflecting yoke core characterized by becoming considering the oxygen density at the time of said baking as 3 - 13% in the manufacture approach of the deflecting yoke core which it comes to cool slowly after kneading a binder and water to this, corning a pellet, forming this pellet in the shape of a ring and calcinating at predetermined temperature.
[Claim 4] The manufacture approach of the deflecting yoke core according to claim 3 characterized by becoming considering the cooling rate to 500 degrees C after said baking as 120 degrees C/h - 400 degrees C/h.
[Claim 5] The deflecting yoke core which it comes to manufacture by the manufacture approach of claim 3 or claim 4 using the ferrite ingredient concerning claim 1 or claim 2.

[Translation done.]

* NOTICES *

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] This invention relates to the deflecting yoke core manufactured by it by the ferrite ingredient list suitable for manufacture of the deflecting yoke core of the image display device called the television television machine and CRT display, and its manufacture approach.
[0002]
[Description of the Prior Art] As a ferrite core ingredient of the above-mentioned deflecting yoke for image display devices, the Mg-Zn system ferrite ingredient and the ferrite ingredient of a Mn-Zn system are used.
[0003] Generally the presentation of the principal component of the ferrite ingredient of a Mn-Zn system serves as the Fe2 O3 51-55-mol% and 20-45-mol [of MnO(s)] % and 5-25-mol [of ZnO(s)] range of %.
[0004]
[Problem(s) to be Solved by the Invention] Since the magnetic properties of a quality-of-the-material proper are inferior compared with the ferrite ingredient of a Mn-Zn system in the case of the ferrite ingredient of a Mg-Zn system, the core loss was large and initial permeability was also small, when it applies to the deflecting yoke for CRT used in a high-frequency band, self-generation of heat of a core becomes large and image quality degradation of a color gap etc. arises on a screen. On the other hand, in the case of the ferrite ingredient of a Mn-Zn system, it is Fe 2O3. Since there are many contents, resistance is low, in applying to the above-mentioned deflecting yoke, insulating coating of the front face is carried out, or a manufacturing cost will become high also in manufacture conditions for ambient atmosphere baking.
[0005] Therefore, the purpose of this invention is made high resistance, and it has high permeability and it is to offer the ferrite ingredient and the deflecting yoke core using this, and its manufacture approach of a Mn-Zn system of a core loss. [of little low cost]
[0006]
[Means for Solving the Problem] In order to attain the above-mentioned purpose, in invention according to claim 1, ZnOmol%/Fe2 O3 mol% offered 0.35 or less ferrite ingredient as a principal component, including Fe2 O3 43.0-49.5-mol%, 33.5-49.0 mol % of MnO(s), and 8.0-17.0 mol % of ZnO(s).
[0007] Thereby, the ferrite ingredient of this invention is more expensive than the initial permeability (380) of the conventional Mg-Zn system ferrite ingredient, and its core loss is also smaller than the core loss value (32 kW/m3) of the Mg-Zn system ferrite ingredient under 100kHz, 20mT, and 80-degree C conditions. And since a front face and internal resistance are also as large as 1 M omega or more, it can be suitably used as a deflecting yoke core again, without performing processing like coating like the ferrite ingredient of the conventional Mn-Zn system.
[0008] And when coming to add at least one or more of of CaO0.006 - 0.12wt%, SiO2 0.001 - 0.05wt%, and Bi2 O3 0.1 - 1.0wt% into the above-mentioned ferrite ingredient as an accessory constituent, a core loss can be improved further.
[0009] Moreover, by the approach of this invention, Fe2 O3 43.0-49.5-mol%, 33.5-49.0 mol % of MnO(s), and 8.0-17.0 mol % of ZnO(s) are included as a principal component. And after mixing the ferrite ingredient which becomes considering ZnOmol%/Fe2 O3 mol% as 0.35 or less and carrying out temporary quenching, it pulverizes. After kneading a binder and water to this and corning a pellet, in the manufacture approach of the deflecting yoke core which it comes to cool slowly after forming this pellet in the shape of a ring and calcinating at predetermined temperature, it is making the oxygen density at the time of said baking into 3 - 13%. Thereby, a deflecting yoke core with few core losses can be manufactured.
[0010] And in the manufacture approach of the aforementioned deflecting yoke core, the deflecting yoke core which a crack does not generate by this can be preferably manufactured by carrying out the cooling rate to 500 degrees C after

said baking in 120 degrees C/h - 400 degrees C/h.
[0011] Since there are few core losses compared with a Mg-Zn system ferrite ingredient when a deflecting yoke core is manufactured using an above-mentioned ferrite ingredient and the above-mentioned manufacture approach, generation of heat of a core can be suppressed low. Moreover, since surface electrical resistance is high enough, it is not necessary to carry out insulating coating of the front face like the conventional Mn-Zn system ferrite ingredient, and is low cost.
[0012]
[Embodiment of the Invention] Fe 2O3 which is the main constituent of the ferrite ingredient of a Mn-Zn system Various presentation ratios of the raw material which consists of MnO and ZnO were boiled and changed, to weighing capacity and the thing pulverized over 4 hours with the ball mill after that, polyvinyl alcohol 1.5wt% and water 1wt% were added, each raw material was kneaded [it mixed and temporary baking was carried out in 2 hour air at 850 degrees C,] as a binder, and the pellet was corned. It fabricated using the pellet with the outer diameter of 25mm, a bore [of 15mm], and a height of 5mm in the shape of a ring, and after that, it calcinated in 1300-degree C 10% oxygen density for 3 hours, it cooled slowly in o'clock in 120 degrees C /, and sample (1) - (30) was obtained. And the result of having measured the core loss Pc of each of these samples (kW/m3), permeability mui, the curie temperature Tc (degree C), surface electrical resistance Rs (M omega), and internal resistance Ri (M omega) was shown in Table 1.
[0013]
[Table 1]

試料	Fe_2O_3 mol%	MnO mol%	ZnO mol%	Z/F	Pc KW/m³	μi	Tc ℃	Rs MΩ	Ri MΩ	
NO.1	42	46	12	0.26	34.1	394	152	25	5.1	比較例
2	43	50	7	0.17	33.7	391	>180	30	5.1	比較例
3	〃	49	8	0.19	31.9	386	>180	25	5	本発明
4	〃	44	13	0.3	28	425	155	31	5.3	〃
5	〃	42	15	0.35	28.5	441	132	28	5	〃
6	〃	41	16	0.37	28.6	450	119	30	4.7	比較例
7	45	48	7	0.16	33.9	585	>180	36	4.4	比較例
8	〃	47	8	0.18	31.6	596	>180	25	4	本発明
9	〃	44	11	0.24	27	635	180	35	4.3	〃
10	〃	40	15	0.33	24.1	662	142	34	3.9	〃
11	〃	39	16	0.36	24.5	676	129	31	4.1	比較例
12	47	46	7	0.15	34	743	>180	30	2.7	比較例
13	〃	45	8	0.17	31.8	766	>180	35	2.4	本発明
14	〃	41	12	0.26	20.6	825	>180	34	2.7	〃
15	〃	38	15	0.32	19.5	885	152	37	2.8	〃
16	〃	37	16	0.34	19.6	892	140	39	2.5	〃
17	〃	36	17	0.36	20.5	901	125	38	2.6	比較例
18	49	44	7	0.14	33.5	965	>180	37	1.5	比較例
19	〃	43	8	0.16	30	975	>180	35	1.7	本発明
20	〃	39	12	0.24	18.7	1022	>180	35	1.6	〃
21	〃	36	15	0.31	17.5	1040	162	35	1.2	〃
22	〃	34	17	0.35	17.6	1068	138	35	1.3	〃
23	〃	33	18	0.37	18.6	1070	128	35	1.2	比較例
24	49.5	43.5	7	0.14	33.8	980	>180	24	1.3	比較例
25	〃	42.5	8	0.16	30.5	992	>180	31	1.2	本発明
26	〃	38.5	12	0.24	19.2	1032	>180	31	1.3	〃
27	〃	35.5	15	0.3	18.4	1075	164	36	1.1	〃
28	〃	33.5	17	0.34	19.1	1085	140	34	1.1	〃
29	〃	32.5	18	0.36	19.6	1092	128	34	1	比較例
30	50	35	15	0.3	20.2	1072	170	15	0.1	比較例

＊Pcは100KHz，20mT，80℃での値
＊μiは100KHz，25℃での値

[0014] It sets to the above-mentioned table 1, and is Fe 2O3 like a sample 1. When a content becomes less than [42mol%], a core loss is 32kW/m3 like the ferrite ingredient of the conventional Mg-Zn system. Since it becomes large with the above, it is unsuitable. Moreover, it is Fe 2O3 like a sample 30. Since internal resistance will become remarkably small if a content exceeds 50-mol%, it is unsuitable. Moreover, it is Fe 2O3 like the ferrite ingredient concerning samples 2, 7, 12, 18, and 24. Although a content is 43.0-49.5-mol within the limits which is %, when the content of ZnO becomes less than [8.0mol%], core losses are conventional 32 kW/m3. It becomes large with the above and is unsuitable. Moreover, when ZnOmol%/Fe2 O3 mol% exceeds 0.35 like the ferrite ingredient of samples 6, 11, 17, 23, and 29, curie temperature is 130 degrees C or less, and there is a problem practically.
[0015] From the above result, like samples 3-5, 8-10, 13-16, 19-22, and the ferrite ingredient of 25-28 Fe 2O3 8.0-17.0-mol% is included [43.0-49.5 mol% and MnO] for 33.5-49.0-mol% and ZnO. And that from which ZnOmol%/Fe2 O3 mol% becomes 0.35 or less is high permeability from a Mg-Zn system ferrite ingredient. Core losses are also 32

kW/m3. It is as small as the following, and it can be suitably used as a deflecting yoke core, without curie temperature also performing processing like coating like before further, since a front face and internal resistance are also as large as 1 M omega or more above 130 degrees C.

[0016] 17.5kW/m3 which is the optimum value of the core loss of sample No.21 in the above-mentioned table 1 further in this invention It tried to add an accessory constituent into said ferrite ingredient in order to have made it decrease. It is CaO and SiO2 to the basis of intention for the eddy current loss which poses a problem when a high resistive layer is formed in the grain boundary of said ferrite ingredient and it is used with high frequency as the addition component to be reduced, and to reduce a core loss. It chose. Moreover, grain growth of said ferrite ingredient was promoted, the crystal grain child was enlarged, by reducing hysteresis loss, the core loss was reduced and Bi 2O3 was chosen as the intentional basis of like.

[0017] And the result of being independent, and having combined the above-mentioned accessory constituent, having added various amounts to the thing of sample No.21 of the ferrite ingredient of said table 1, and having measured the core loss to it is shown in Table 2.

[0018]

[Table 2]

試料	CaO wt%	SiO_2 wt%	Bi_2O_3 wt%	コアロス kW/cm³	
NO31	0.004	–	–	18.5	比較例
32	0.005	–	–	17.7	比較例
33	0.006	–	–	17.0	本発明品
34	0.03	–	–	15.4	〃
35	0.06	–	–	14.8	〃
36	0.12	–	–	16.1	〃
37	0.13	–	–	17.6	比較例
38	0.15	–	–	18.3	比較例
39	–	00008	–	18.9	比較例
40	–	00009	–	17.6	本発明品
41	–	0.001	–	17.0	〃
42	–	0.01	–	15.5	〃
43	–	0.02	–	14.6	〃
44	–	0.05	–	16.5	〃
45	–	0.06	–	18.1	比較例
46	–	0.08	–	19.1	比較例
47	–	–	0.08	18.6	比較例
48	–	–	0.09	17.6	比較例
49	–	–	0.1	16.8	本発明品
50	–	–	0.4	15.0	〃
51	–	–	0.7	16.3	〃
52	–	–	1.0	17.0	〃
53	–	–	1.1	18.3	比較例
54	–	–	1.2	19.7	比較例
55	0.03	0.01	–	15.5	本発明品
56	0.06	0.02	–	14.6	〃
57	0.03	–	0.2	15.8	〃
58	0.06	–	0.4	15.1	〃
59	–	0.01	0.2	15.7	〃
60	–	0.02	0.4	14.9	〃
61	0.03	0.01	0.2	15.6	〃
62	0.06	0.02	0.4	14.9	〃
NO21	–	–	–	17.5	比較例

注) コアロスは、100kHz，20mT，80℃ の測定値

[0019] The core loss is reducing that whose addition of CaO of sample No.33-36 is 0.006 - 0.12wt% rather than the thing of a sample 21 from Table 2. Moreover, SiO2 of sample No.41-44 The thing whose addition is 0.001 - 0.05wt%, and Bi 2O3 of sample No.49-52 The core loss is also reducing that whose addition is 0.1 - 1.0wt% rather than the thing of sample No.21. Moreover, the core loss is also reducing the thing of sample No.61-62 which added the thing of sample No.55-60 and three sorts of accessory constituents which added two sorts of accessory constituents in the above-mentioned addition range rather than the thing of sample No.21.

[0020] It is Fe 2O3 as a principal component from the above-mentioned thing. 8.0-17.0-mol% is included [43.0-49.5

mol% and MnO] for 33.5-49.0-mol% and ZnO. Into the ferrite ingredient whose 2O3-mol % of ZnOmol%/Fe(s) is 0.35 or less, and as an accessory constituent 0.006 - 0.12wt% and SiO2 of CaO 0.001 - 0.05wt% and Bi 2O3 By adding at least one or more of of 0.1 - 1.0wt%, a core loss is further improvable.

[0021] Although the oxygen density at the time of baking of a deflecting yoke was made into 10% in the above-mentioned embodiment of this invention, it experimented by changing this oxygen density about how a core loss and internal resistance, and surface electrical resistance change. this experiment shows to sample No.21 of Table 1 -- as -- as a principal component -- Fe 2O3 49-mol% and MnO -- 36-mol% and ZnO -- 15-mol% -- on the same conditions as the embodiment of Table 1, what was included changed the oxygen density, after grinding and fabricating, mixing, temporary quenching, and, and it calcinated at 1300 degrees C, sample No.63-73 were obtained, and that result was shown in Table 3.

[0022]

[Table 3]

試料	PO_2 %	Pc kW/m	Rs MΩ	Ri MΩ	
NO63	2	17.6	15	0.3	比較例
64	2.5	17.1	18	0.5	比較例
65	3	17	21	1	実施例
66	5	16.9	28	1	〃
67	8	17.1	32	1.1	〃
21	10	17.5	35	1.2	〃
68	12	17.5	35	1.8	〃
69	13	17.5	36	2.1	〃
70	14	18.6	38	2.5	比較例
71	15	25.4	39	2.7	〃
72	17	31.8	38	3.5	〃
73	17.5	33.1	41	4.1	〃

＊Pcは、100kHz，20mT，80℃ の測定値

[0023] When an oxygen density is less than 3% so that clearly from this table 3, internal resistance becomes quite low and becomes unsuitable as a deflecting yoke core from 1 M omega. On the other hand, since a core loss will get worse if an oxygen density exceeds 14%, it becomes unsuitable [this] as a deflecting yoke core.

[0024] Therefore, the oxygen density at the time of baking in this invention serves as range where 3 - 13% is desirable from this table 3.

[0025] Moreover, although the annealing rate after baking of a deflecting yoke core was carried out in 120 degrees C/h in the above-mentioned example of this invention, it experimented about how change of this annealing rate affects a core loss. this experiment shows to sample No.21 of Table 1 -- as -- as a principal component -- Fe 2O3 Mixing of what was included on the same conditions as the embodiment of Table 1 49-mol% and MnO -- 36-mol% and ZnO -- 15-mol% -- Sample No.84-90 to which it calcinates at 10% of oxygen densities after grinding and fabricating, temporary quenching and, various annealing rates to 500 degrees C are looked like [90], and are changed, and various annealing rates were looked like [90] and changed as mentioned above after changing only sample No.74-83 and an oxygen density to 5% and calcinating them are obtained. The existence of a crack of the electromagnetic property and core was investigated, and it was shown in Table 4. In addition, 500 degrees C to the room temperature considered as natural air cooling.

[0026]

[Table 4]

試料	冷却速度 ℃/h	PO_2 %	Pc kW/m³	Rs MΩ	Ri MΩ	亀裂の有無
NO74	70	10.0	33.8	38.0	1.8	無
75	80	10.0	31.6	36.0	1.7	無
76	100	10.0	25.6	37.0	1.5	無
21	120	10.0	17.5	35.0	1.2	無
77	180	10.0	16.5	34.0	1.2	無
78	240	10.0	16.4	30.0	1.2	無
79	300	10.0	15.8	25.0	1.1	無
80	360	10.0	14.8	20.0	1.0	無
81	400	10.0	15.6	18.0	1.0	無
82	420	10.0				有
83	500	10.0				有
84	100	5.0	24.8	30.0	1.4	無
85	120	5.0	16.9	28.0	1.0	無
86	180	5.0	15.9	27.0	1.0	無
87	300	5.0	15.3	20.0	1.0	無
88	360	5.0	14.3	16.0	1.0	無
89	400	5.0	15.0	14.0	1.0	無
90	420	5.0				有

＊Pcは、100kHz，20mT，80℃ の測定値

[0027] If a cooling rate becomes slower 120 degrees C /than h so that clearly from this table 4, a core loss will go up remarkably and magnetic properties will deteriorate. On the other hand, if a cooling rate becomes quicker 400 degrees C /than h, a crack will occur to a core and it will become use impossible. Therefore, the cooling rate from this table 4 to 500 degrees C after baking in this invention serves as range where h is desirable 120 degrees C/h - 400 degrees C /.
[0028] The result of generation of heat of the core at the time of using the core using an above-mentioned ingredient and the above-mentioned manufacture approach as a deflecting yoke is shown in Table 5. the configuration of a deflecting yoke core -- the large outer diameter of 100mm, the small outer diameter of 70mm, height of 50mm, and volume 100m3 it is .
[0029]
[Table 5]

	コア材質	コア損失	温度上昇 (コア部分)
従来例	Mg－Zn系	1900mW	42 ℃
本発明	高抵抗 Mn－Zn系	1150mW	39 ℃

[0030] Even if there are few 3-degree-C temperature rises and they apply the deflecting yoke which used this invention article to the deflecting yoke for CRT used in a high frequency band compared with the deflecting yoke which used the conventional Mg-Zn system ferrite ingredient, it does not produce image quality degradation of a color gap etc., so that clearly from this table 5.
[0031]
[Effect of the Invention] As mentioned above, the ferrite ingredient concerning this invention is high permeability from the conventional Mg-Zn system ferrite ingredient, and core losses are also 32 kW/m3. It is as small as the following. And since a front face and internal resistance are also as large as 1 M omega or more, it can be suitably used as a

deflecting yoke core again, without performing processing like coating like the ferrite ingredient of the conventional Mn-Zn system.

[0032] And they are 0.006 - 0.12wt% of CaO, and SiO2 as an accessory constituent to the above-mentioned ferrite ingredient. 0.001 - 0.05wt% and Bi 2O3 When coming to add at least one or more of of 0.1 - 1.0wt%, a core loss can be improved further.

[0033] Moreover, by the manufacture approach of the deflecting yoke core concerning this invention, a deflecting yoke core with few core losses can be manufactured.

[0034] And in the manufacture approach of the aforementioned deflecting yoke core, the deflecting yoke core which a crack does not generate by this can be preferably manufactured by carrying out the cooling rate to 500 degrees C after said baking in 120 degrees C/h - 400 degrees C/h.

[Translation done.]

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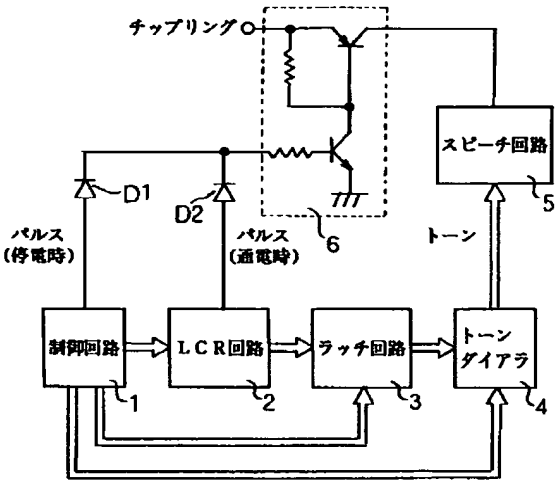
(54)【発明の名称】　電話機

(57)【要約】
【目的】　通常の電話機は停電時でも回線からの電源で最低限度の発着信動作ができるように、低動作電圧、低消費電流仕様となっている。近年、複数の電話回線の中から通話距離、通話時間等に基づいて通話料金が安くなる電話回線を自動的に選択するＬＣＲ機能を有する電話機が開発される。しかし、ＬＣＲ機能を動作するＬＣＲ回路は低動作電圧、低消費電流仕様となっておらず、停電時は動作しない。そのために、停電時でもＬＣＲ機能を有しない通常の発着信動作ができるようにトーン／パルススイッチャブルダイヤラが追加される。ＬＣＲ機能付電話機はダイヤル発信に関して同様な機能を２つ有することとなるため、何らかの方法によりトーン／パルススイッチャブルダイヤラを削除して価格低下を計り、安価な商品を提供する。
【構成】　停電時において、パルスダイヤルのときは制御回路（１）がパルス信号を発信し、トーン信号のときはトーンダイアラからトーン信号を発信する。



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【特許請求の範囲】

【請求項1】制御回路とＬＣＲ回路とトーンダイアラを有し、制御回路は停電の検出及びＬＣＲ回路とトーンダイアラを制御するものであり、ＬＣＲ回路は複数の電話回線の中から通話距離、通話時間等に基づいて通話料金が安くなる電話回線を自動的に選択するものであり、通電時のトーン信号は制御回路の制御によりＬＣＲ回路を通してトーンダイヤラから送出され、通電時のパルス信号は制御回路の制御によりＬＣＲ回路から送出される電話機において、停電時のトーン信号は制御回路の制御によりＬＣＲ回路は通さずトーンダイヤラから送出され、停電時のパルス信号は制御回路から送出されることを特徴とする電話機。

【発明の詳細な説明】

【０００１】

【産業上の利用分野】本発明は、ＬＣＲ機能を有する電話機に関する。

【０００２】

【従来の技術】ダイヤル信号は電話回線の種類に対応してトーンダイヤルとパルスダイヤル（ＤＴＭＦ）の２種類がある。トーンダイヤルはダイヤル（キー）に対応した高低２種類の多重周波数信号を送出するものであり、パルスダイヤルはダイヤルの数だけ回線を「断」することで電話番号を送出するものである。これらの手段として、専用ＬＳＩまたは電話専用マイコンのトーン／パルススイッチャブルダイヤラが種々のメーカーから供給されている。これは停電時でも回線からの電源で最低限度の発着信動作ができるように、低動作電圧、低消費電流仕様となっている。

【０００３】近年、ＮＴＴと第二電電（ＤＤＩ）や日本テレコム（ＪＩ）ならびに日本高速通信（ＴＷＪ）の中から通話距離、通話時間等に基づいて通話料金が安くなる電話回線を自動的に選択する所謂ＬＣＲ（リースト・コスト・ルーチング）機能を搭載する電話機が発売される。この電話機のダイヤル発信について図２に基づき説明する。制御回路（１）とＬＣＲ回路（２）とラッチ回路（３）とトーンダイアラ（４）とスピーチ回路（５）と回路閉結用Ｔｒ回路（６）とトーン／パルススイッチャブルダイヤラ（７）を有する。制御回路（１）は停電を検出及びＬＣＲ回路（２）とラッチ回路（３）とトーンダイアラ（４）とトーン／パルススイッチャブルダイヤラ（７）を制御するものである。ＬＣＲ回路（２）は前記ＬＣＲ機能を有するものであり、ラッチ回路（３）は入力された信号を規定の時間出力させるものであり、スピーチ回路は２線／４線変換や防側音機能を有するものである。回路閉結用Ｔｒ回路（６）は入力されたパルス信号から回線を「断」するものであり、トーン／パルススイッチャブルダイヤラ（７）は前述の如く、停電時でも回線からの電源でトーン信号とパルス信号の送出ができるものである。ダイオード（Ｄ１）、（Ｄ２）は制

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御回路（１）及びＬＣＲ回路（２）から回路閉結用Ｔｒ回路（６）への２つの信号をＯＲで選択するものである。この構成により、通電時のトーン信号は制御回路の制御によりＬＣＲ回路（２）とラッチ回路（３）を通してトーンダイヤラから送出され、通電時のパルス信号は制御回路（１）の制御によりＬＣＲ回路（２）から送出される。ＬＣＲ回路（２）は低動作電圧、低消費電流仕様ではないために停電時は動作できない。停電時にＬＣＲ機能を働かせることはできないという点はやむを得ないとしても、全くダイヤルができないという点は情報通信を閉ざすこととなり問題である。これを解決するために、停電時は制御回路（１）の制御によりＬＣＲ回路は通さずトーン／パルススイッチャブルダイヤラ（７）を通してトーン信号またはパルス信号を送出させる。これにより、停電時時は、ＬＣＲ機能は働かないが、ダイヤルはできることとなる。

【０００４】

【発明が解決しようとする課題】上述のＬＣＲ機能を有する電話機においては、トーンダイヤルとパルスダイヤルを送出する手段が通電時と停電時の２種類を具備することになる。同様な機能を２つ有することとなり、トーン／パルススイッチャブルダイヤラの削除が切望されている。

【０００５】

【課題を解決するための手段】本発明はかかる課題を解決するため、制御回路とＬＣＲ回路とトーンダイアラを有し、制御回路は停電の検出及びＬＣＲ回路とラッチ回路とトーンダイアラを制御するものであり、ＬＣＲ回路は複数の電話回線の中から通話距離、通話時間等に基づいて通話料金が安くなる電話回線を自動的に選択するものであり、通電時のトーン信号は制御回路の制御によりＬＣＲ回路を通してトーンダイヤラから送出され、通電時のパルス信号は制御回路の制御によりＬＣＲ回路から送出される電話機において、停電時のトーン信号は制御回路の制御によりＬＣＲ回路は通さずトーンダイヤラから送出され、停電時のパルス信号は制御回路から送出されるものである。

【０００６】

【作用】停電時、ＬＣＲ機能の働きの一部を制御回路が行うことにより、停電時のためにだけ具備していたトーン／パルススイッチャブルダイヤラを削除することができるようになる。これにより、安価な商品を提供することができる。

【０００７】

【実施例】本発明の実施例を図１に基づき説明する。制御回路（１）とＬＣＲ回路（２）とラッチ回路（３）とトーンダイアラ（４）とスピーチ回路（５）と回路閉結用Ｔｒ回路（６）を有する。制御回路（１）は停電を検出及びＬＣＲ回路（２）とラッチ回路（３）とトーンダイアラ（４）を制御するものである。ＬＣＲ回路（２）

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は前記ＬＣＲ機能を有するものであり、ラッチ回路（３）は入力された信号を規定の時間出力させるものであり、スピーチ回路は２線／４線変換や防側音機能を有するものであり、回路閉結用Ｔｒ回路（６）は入力されたパルス信号から回線を「断」するものである。ダイオード（Ｄ１）、（Ｄ２）は制御回路（１）及びＬＣＲ回路（２）から回路閉結用Ｔｒ回路（６）への２つの信号をＯＲで選択するものである。

【０００８】この構成により、通電時のトーン信号は制御回路の制御によりＬＣＲ回路（２）とラッチ回路（３）を通してトーンダイヤラから送出され、通電時のパルス信号は制御回路（１）の制御によりＬＣＲ回路（２）から送出される。停電時、ＬＣＲ回路（２）は低動作電圧、低消費電流仕様ではないために動作できない。このため、停電時のトーン信号は制御回路（１）の制御により、ラッチ回路（３）を不動作にし、トーンダイアラ（４）から送出させ、停電時のパルス信号は直接制御回路（１）から送出させる、

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【０００９】

【発明の効果】停電時、ＬＣＲ機能の働きの一部を制御回路が行うことにより、停電時のためにだけ具備していたトーン／パルススイッチャブルダイヤラを削除することができるようになる。これにより、安価な商品を提供することができる。

【図面の簡単な説明】

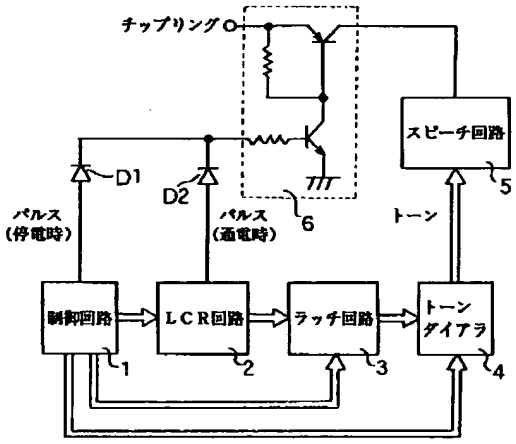
【図１】本発明の実施例を示すブロック図である。

【図２】従来例を示すブロック図である。

【符号の説明】

1　制御回路
2　ＬＣＲ回路
3　ラッチ回路
4　トーンダイアラ
5　スピーチ回路
6　回路閉結用Ｔｒ回路
7　トーン／パルススイッチャブルダイヤラ

【図１】



【図２】